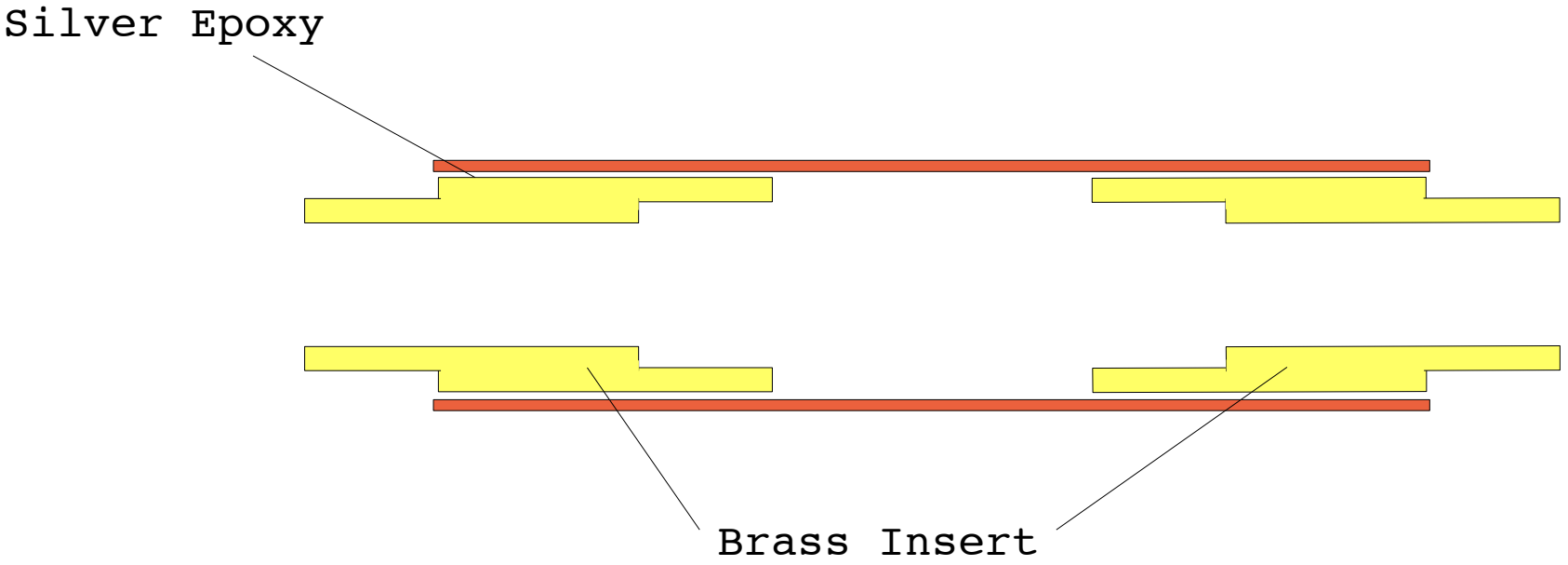
CKM Straw Assembly Procedure



1. Using Silver Epoxy, glue on the “Brass Inserts” onto both ends of the straws.

The Brass Insert makes electrical connection between the chamber frame and the copper inner lining of the straw.

Brass insert is also part of the vacuum seal.

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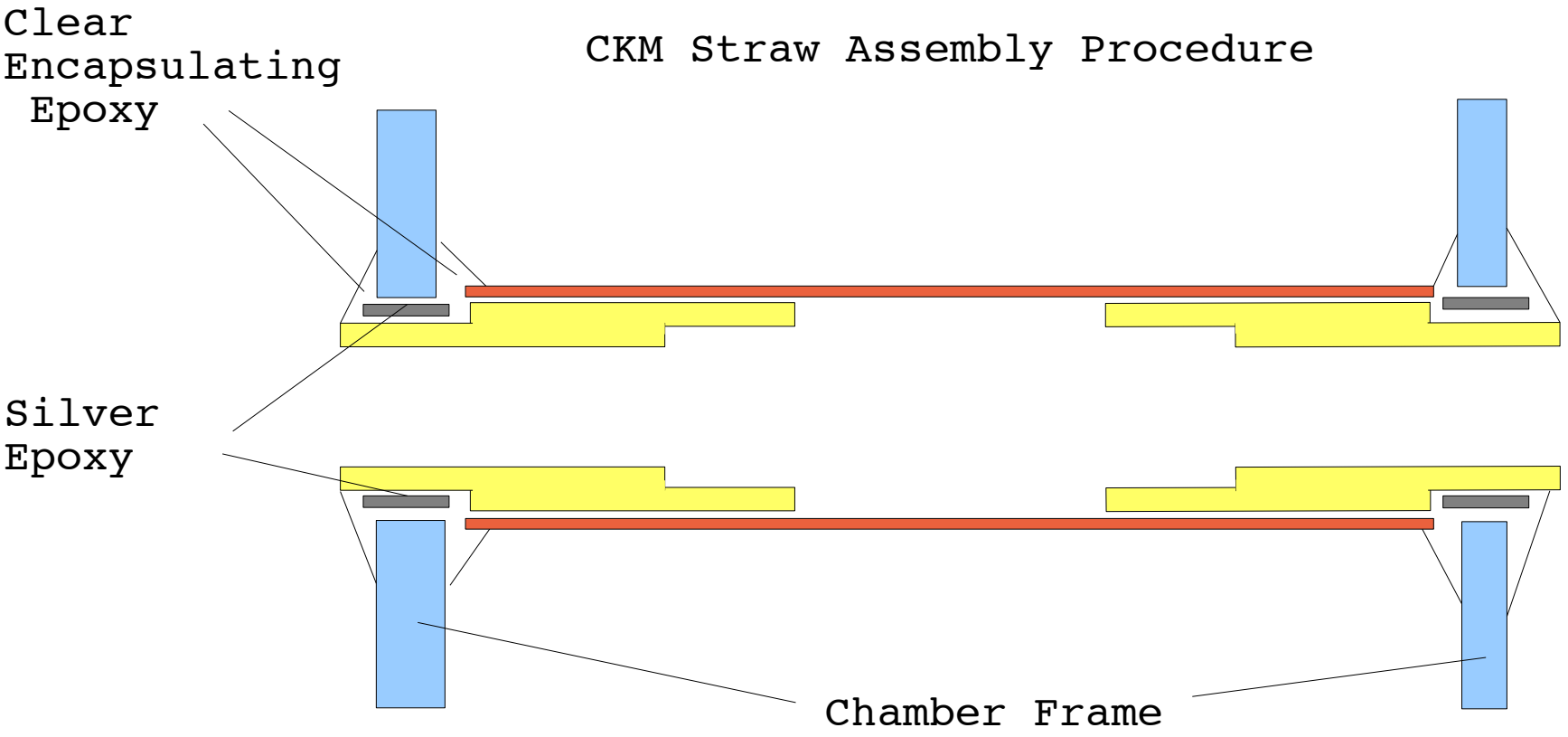
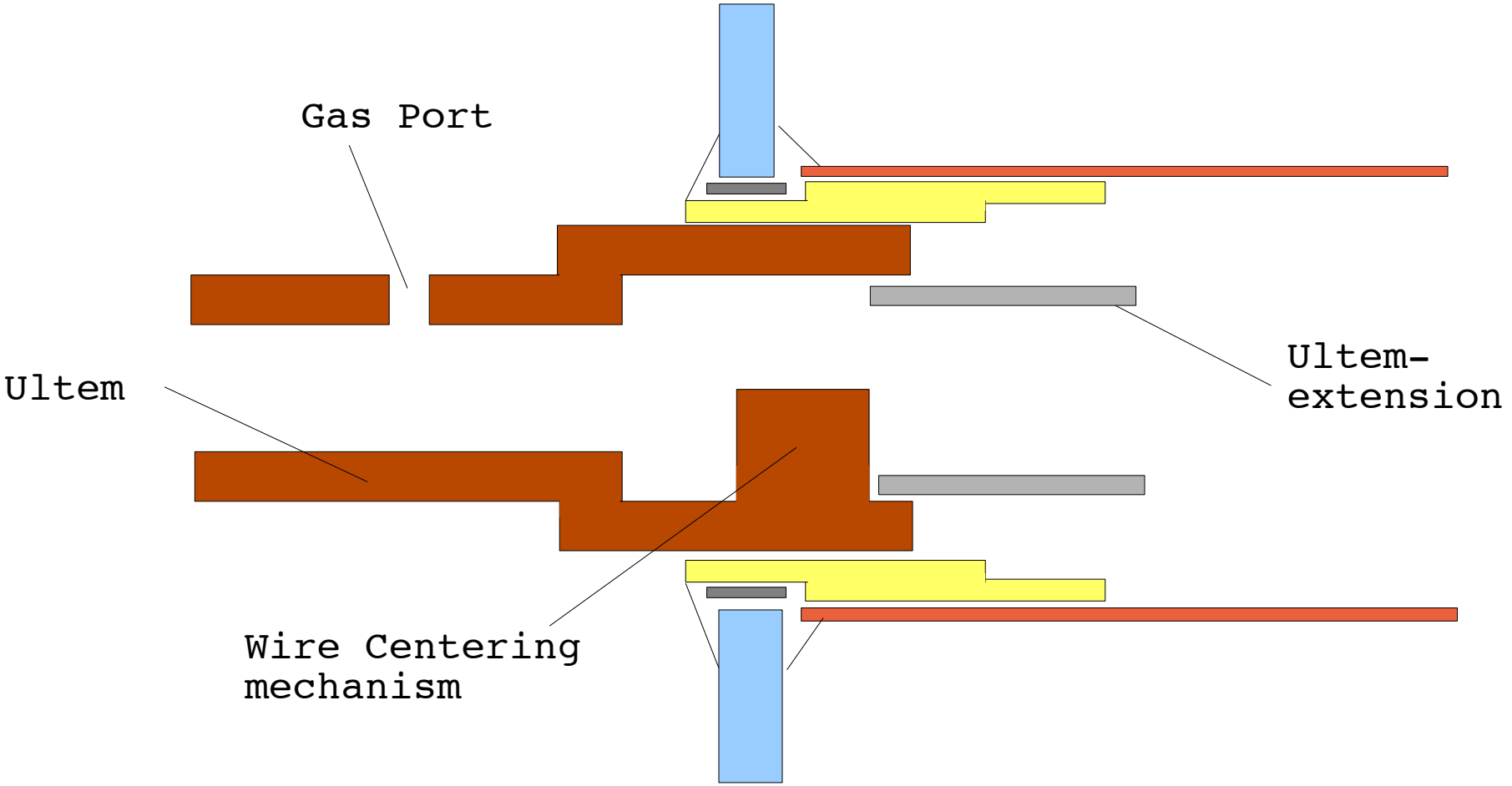


2. Using Silver Epoxy, attach the Brass Inserts onto the chamber frame. The straw must be resting on an alignment plate, to constrain it to stay in the desired position. Desired placement accuracy is about 25 microns.

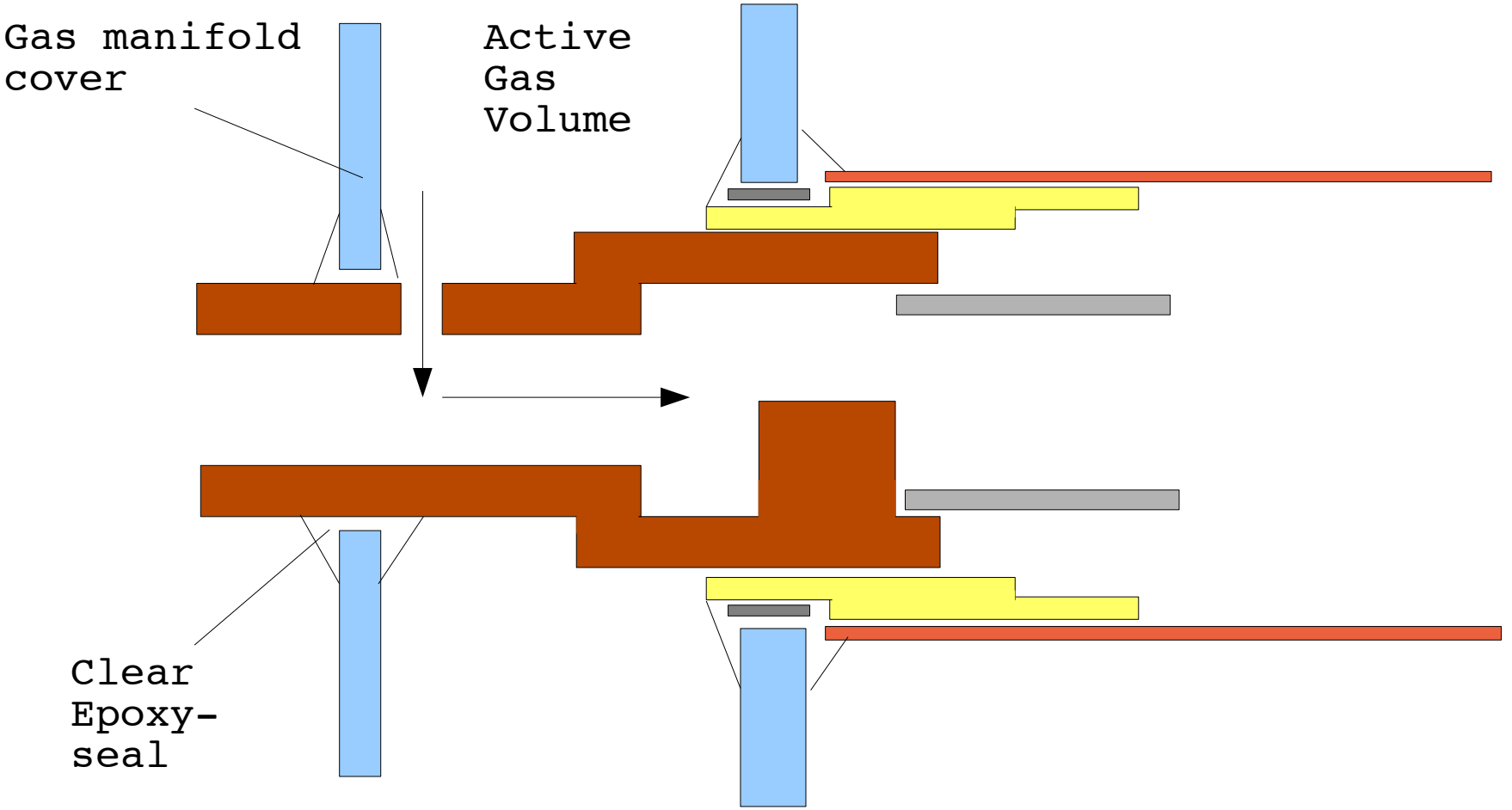
After Silver Epoxy cures, encapsulate with a clear and soft epoxy.



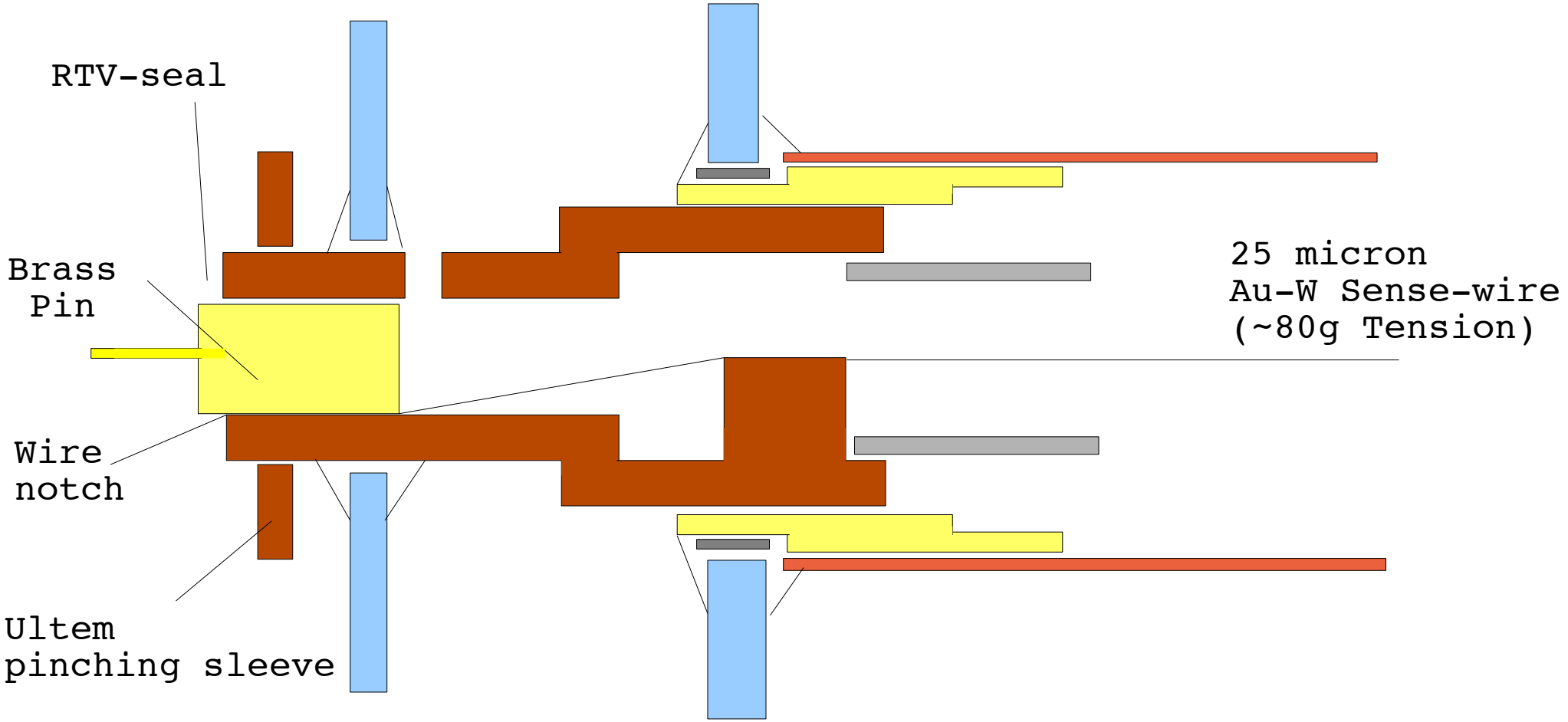
3. Insert Ultem and Ultem Extension into both ends of the straws. I recall that this was attached with clear epoxy. But not sure.

The Ultem is a critical part of the system. It routes chamber gas into the straw. It centers the wire within the straw.

The Ultem-extension is an insulating sleeve that fits at the end of the ultem. It prevents electrical breakdown between the wire and the brass sleeve. It is glued into the Ultem.



4. Carefully attach the gas manifold cover, and seal with clear epoxy. This defines the active gas volume.



5. String the wire through the ultem. The wire is held in place by friction with the brass pin and the “Ultem Pinching Sleeve”, which squeezes the ultem.

The brass pin is another important component. It makes a gas seal. It also makes electrical connection to the wire. It has a needle point head, for making electrical connection to the electronics cards.

The wire must exit the ultem through a tiny notch molded into the ultem. An RTV seal is applied after attaching the pinching sleeve. The RTV seal is removable, so that broken wires can be replaced.